

REMARKS/ARGUMENTS

The Applicant has carefully considered this application in connection with the Examiner's Action and respectfully requests reconsideration of this application in view of the foregoing amendment and the following remarks.

The Applicant originally submitted Claims 1-20 in the application. The Applicant has amended Claims 6 and 9. The Applicant has not canceled or added any claims. Accordingly, Claims 1-20 are currently pending in the application.

I. Formal Matters and Objections

The Examiner objected to FIGURES 2A-2D and 3 as not being designated as prior art. Contemporaneously herewith, a drawing correction is being submitted to overcome this objection. The Applicant, therefore, requests the Examiner to withdraw the objection.

The Examiner objected to Claim 9 as containing the informality of the independent claim recited only one group and dependent Claim 9 recited "said groups." Claim 9 has been amended to clarify that a plurality of time periods, each of which constitutes a group, is claimed. In view of the amendment, the Applicant requests the Examiner to withdraw the objection.

II. Rejection of Claims 1-10 under 35 U.S.C. §101

The Examiner has rejected Claims 1-10 under 35 U.S.C. §101 as directed to non-statutory subject matter. The Applicant is amenable to amending independent Claim 1 to overcome the objection, provided such amendment does not narrow the scope of the claimed invention. However, the Applicant sees no reason for such amendment in view of the fact that the apparent policy of the

United States Patent Office is to allow claims directed to a propagated signal. See, for example, Claims 31 and 32 in U.S. Patent 6,670,969 to Halstead, *et al.*, issued on December 30, 2003. The Applicant respectfully requests the Examiner to reconsider his determination that Claims 1-10 are directed to non-statutory subject matter and withdraw this rejection.

III. Rejection of Claim 6 under 35 U.S.C. §112

The Examiner rejected Claim 6 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. The Examiner noted that Claim 6 appeared to recite data being encoded by time slots rather than by pulses located within a group of time slots. Claim 6 has been amended to clarify this point and to overcome the Examiner's rejection. The Applicant, therefore, respectfully requests the Examiner to withdraw the rejection of Claim 6.

IV. Rejection of Claims under 35 U.S.C. §102

The Examiner has rejected Claims 1-3, 5-13 and 15-20 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,767,855 to Ueno, *et al.* (Ueno). As the Examiner is no doubt aware, anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference; the disclosed elements must either be disclosed expressly or inherently and must be arranged as in the rejected claims.

Ueno describes a pulse position modulation communication system that eliminates the need for generating independent synchronizing pulses at the point of transmission. (Abstract). Ueno addresses synchronization of pulse position modulation (PPM) where data is encoded by one

pulse in one of a number of time slots that, together, make up a “word.” In Ueno, each word has one, and only one, pulse that encodes data. Ueno also describes multiplexing multiple source data streams and how the data from individual streams are mapped into the time slots of a PPM frame.

Ueno does not describe using multiple pulses to encode data in multiple time slots within a single word or defined group of time slots. The Examiner states that “... *several words* of a frame, which *overall* comprise multiple pulses, are encoded” (Emphasis added). (Office Action, page 4). The Examiner correctly concludes that Ueno encodes data using multiple pulses in multiple words. The Examiner, however, stacks words or frames together in reaching the conclusion that multiple data pulses are present. Note that in Figure 1B of Ueno, each word contains 8 slots numbered from 0 to 7. In Figures 1C and 1D, each word also contains 8 slots but a sync slot is inserted between each word or group of slots so that each sequence now shows 9 slots or two groups of slots, one with a single time slot and the other with 8. The sending of a sync pulse followed by a data pulse is not the same as encoding data using multiple data pulses per word of transmission. Ueno encodes data using multiple pulses, but uses no more than one data pulse per word. Ueno does not encode data using multiple pulses in a single word or in a single time period divided into a group of slots. Thus, Ueno does not describe the present invention set forth in independent Claims 1 or 11. Therefore, Ueno does not disclose each and every element of the claimed invention and, as such, is not an anticipating reference. Because Claims 2-3, 5-10, 12-13 and 15-20 are dependent upon Claims 1 and 11, Ueno also cannot be an anticipating reference for Claims 2-3, 5-10, 12-13 and 15-20. Accordingly, the Applicant respectfully requests the Examiner to withdraw the §102 rejection with respect to these Claims.

V. Rejection of Claims 4 and 14 under 35 U.S.C. §103

The Examiner rejected Claims 4 and 14 under 35 U.S.C. §103(a) as being unpatentable over Ueno in view of U.S. Patent No. 6,236,855 to Austin. As the Examiner is no doubt aware, determination of obviousness requires consideration of the invention considered as a whole; the inquiry is not whether each element exists in the prior art, but whether the prior art made obvious the invention as a whole. Furthermore, there must be some suggestion or teaching in the art that would motivate one of ordinary skill in the art to arrive at the claimed invention; a reference that teaches away from a claimed invention strongly indicates nonobviousness.

Moreover, to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure.

Claims 4 and 14 are each respectively dependent on Claims 1 and 11 and, thus, include all the parent claim limitations. As set forth above, Ueno does not anticipate dependent Claims 1 and 11, because Ueno does not describe propagating a signal wherein an element of data is transmitted using multiple pulses within a time period divided into a single group of time slots. Ueno also does not teach or suggest that multiple pulses with a single group of time slots, or word, can be used to encode data.

Austin does not overcome the shortcoming of Ueno. Austin describes a method of transmitting data that enhances voice quality in a wireless transmission system. Austin uses idle transmission resources to send additional signal enhancing data by using adjacent idle time slots (which, in Ueno, are words, and, in the present invention, a group of time slots) on the same frequency as the time slots carrying the compressed voice signal. Although, Austin does use words or a group of time slots that are not adjacent, Austin does not describe distributing multiple pulses within a group of time slots or word.

Ueno, individually or in combination with Austin, thus fails to teach or suggest the invention recited in independent Claims 1 and 11, and their dependent claims 4 and 14, when considered as a whole. Claims 4 and 14 are therefore not obvious in view of Ueno and Austin.

In view of the foregoing remarks, the cited references do not support the Examiner's rejection of Claims 4 and 14 under 35 U.S.C. §103(a). The Applicant therefore respectfully requests the Examiner withdraw the rejection.

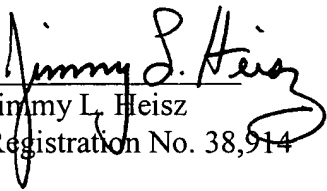
VI. Conclusion

In view of the foregoing amendment and remarks, the Applicant now sees all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicits a Notice of Allowance for Claims 1-20.

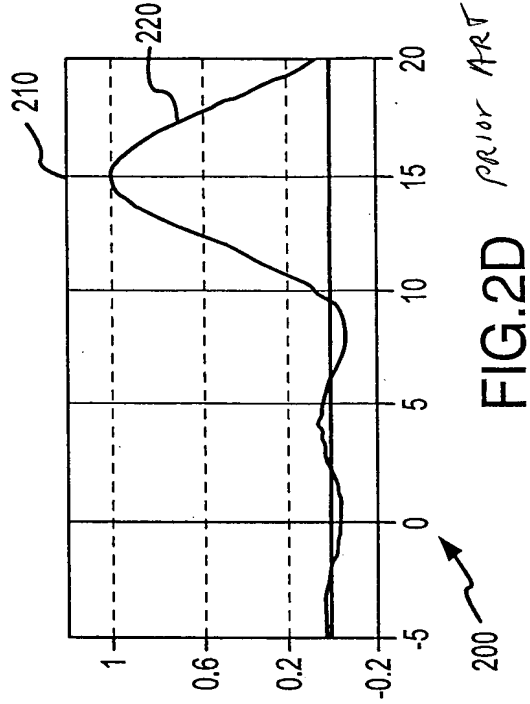
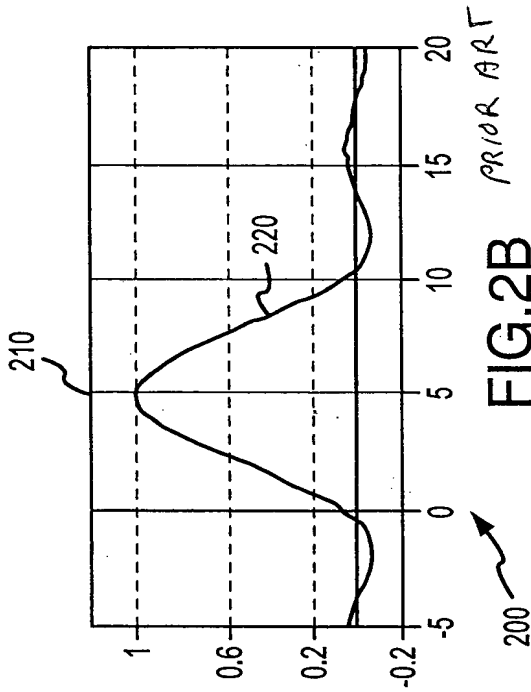
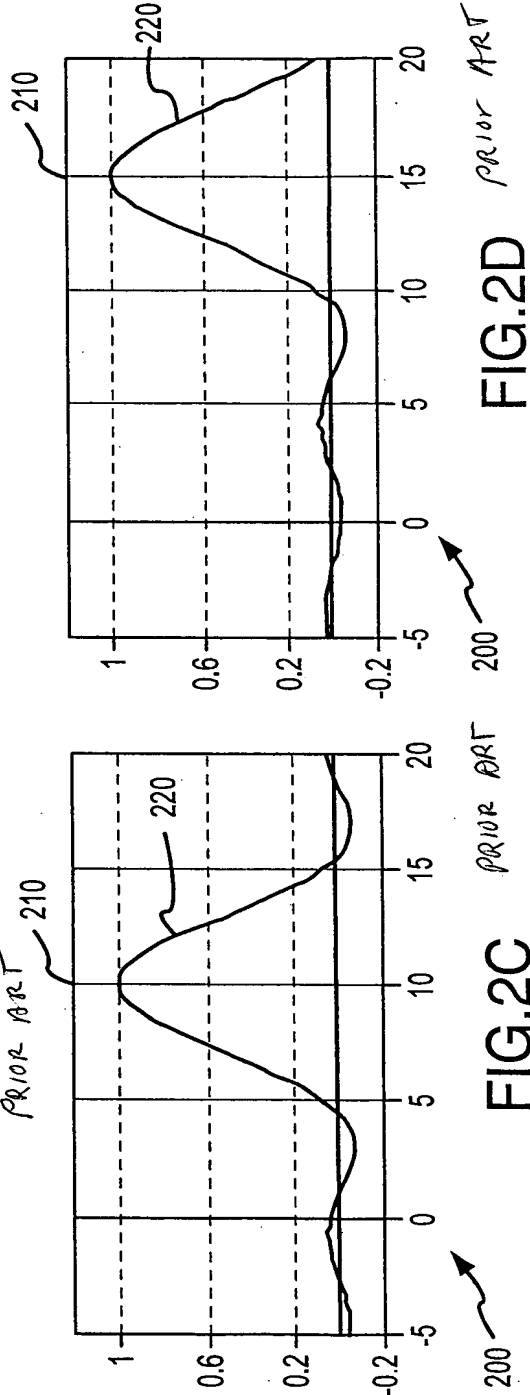
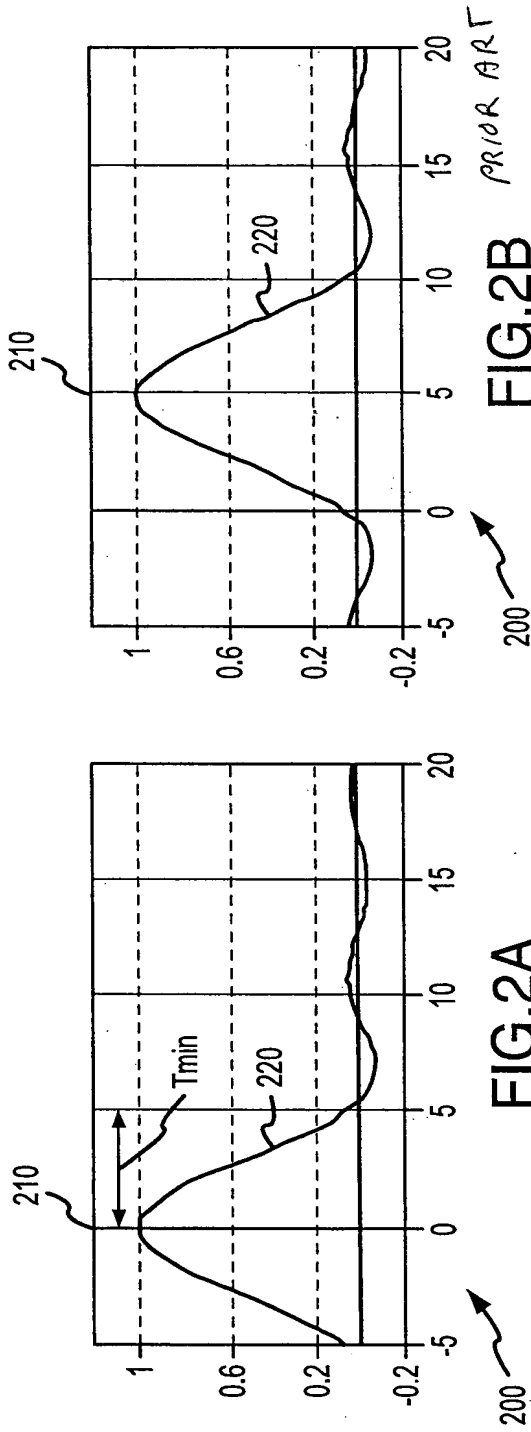
The Applicant requests the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

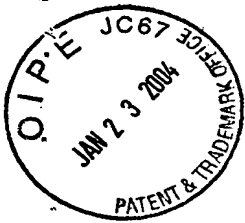
Respectfully submitted,

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REPLACEMENT SHEET

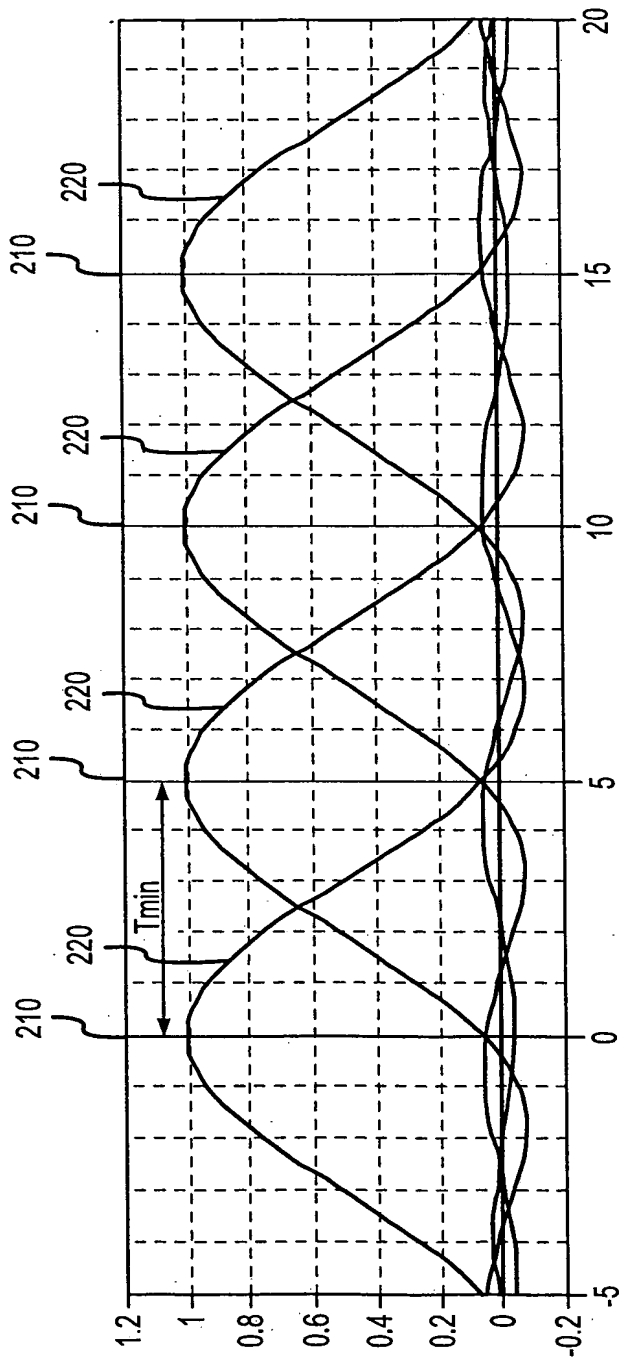


FIG.3
PRIOR ART